

36936000023780

**TD
367
.A56
B733
1972
MOE**

BRADFORD

MINISTRY OF THE
ENVIRONMENT

1972

TD
367
.A56
B733
1972

Bradford : water pollution
control plant.
81605



Ontario

Ministry of the
Environment

135 St. Clair Avenue West

Toronto 195, Ontario

We are pleased to present you with the 1972 operating summary for the water pollution control plant serving your community.

This summary contains data on the performance of the plant as well as relevant financial information. Of particular interest is the review of the year's activities in which significant items of these data are discussed in some detail by the operations engineer and his staff who, by their day-to-day involvement with the operation, are thoroughly familiar with the plant.

We appreciate your continuing interest in protecting the environment through the efficient operation of this wastewater treatment facility.

D. S. Caverly,
Assistant Deputy Minister.

D. A. McTavish, P. Eng.,
Director,
Project Operations Branch.

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable James A.C. Auld

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
D.S. Caverly

EXECUTIVE DIRECTOR
K.H. Sharpe

PROJECT OPERATIONS BRANCH

DIRECTOR
D.A. McTavish

ASSISTANT DIRECTOR
C.W. Perry

REGIONAL SUPERVISOR
P.J. Osmond

OPERATIONS ENGINEER
A. Clark

135 St. Clair Avenue West
Toronto 195

BRADFORD

WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1972 ANNUAL OPERATING SUMMARY



Digitized by the Internet Archive
in 2015

<https://archive.org/details/bradfordwaterpol23780>

asfy

TD
227
1269
638
1073
1075

CONTENTS

Title Page	1
'72 Review	4
Process Data	6

GENERAL

This project consists of a 0.86 MGD high rate treatment plant with a comminution chamber, an aerated grit chamber, two aeration sections, two final clarifiers, two aerobic digesters and a 10-acre lagoon for effluent polishing. Also included in the project is one main pumping station which transmits the majority of the flow to the plant. The remaining flow to the plant is by gravity. The total flow to the plant is measured at the influent chamber.

The Town completed installation of a sewer late in the year, which allowed most of the vegetable processing industries access to the sewage treatment plant. Average daily flows increased to approximately 0.5 MGD and the volume of suspended solids increased considerably. The air diffusion units became plugged and it was not possible to introduce sufficient air and hence efficiency was reduced. Modification of the aeration diffusers is planned.

PLANT FLOWS & CHLORINATION

The flow to the plant was recorded from March 1, 1972. The total estimated yearly flow to the plant was 113.46 million gallons. The average daily flow to the plant was 0.31 million gallons and the maximum daily flow to the plant was 0.79 million gallons.

A total of 3319 pounds of chlorine was required at an average dosage of 4.6 mg/l to maintain a 0.5 mg/l residual in the plant's effluent.

PLANT EFFICIENCY

The average influent BOD and suspended solids were 180 mg/l and 395 mg/l respectively. The average effluent BOD and suspended solids were 17 mg/l and 21 mg/l respectively. The above figures represent a 91 percent BOD reduction and a 95 percent suspended solids reduction.

SLUDGE DIGESTION & DISPOSAL

A total of 9700 gallons of sludge were transferred to the aerobic digesters for further treatment. A total of 9766 gallons of digested sludge was hauled from the plant by a private sludge haulage contract for disposal on land.

CONCLUSIONS

Although the plant's BOD and suspended solids reduction is high, the low flows coupled with high influent suspended solids prohibits the plant's process from producing an effluent which meets the Ministry's standard of 15 mg/l BOD and suspended solids. Another contributing factor to the above was the problem of supplying sufficient air for the high organic loading.

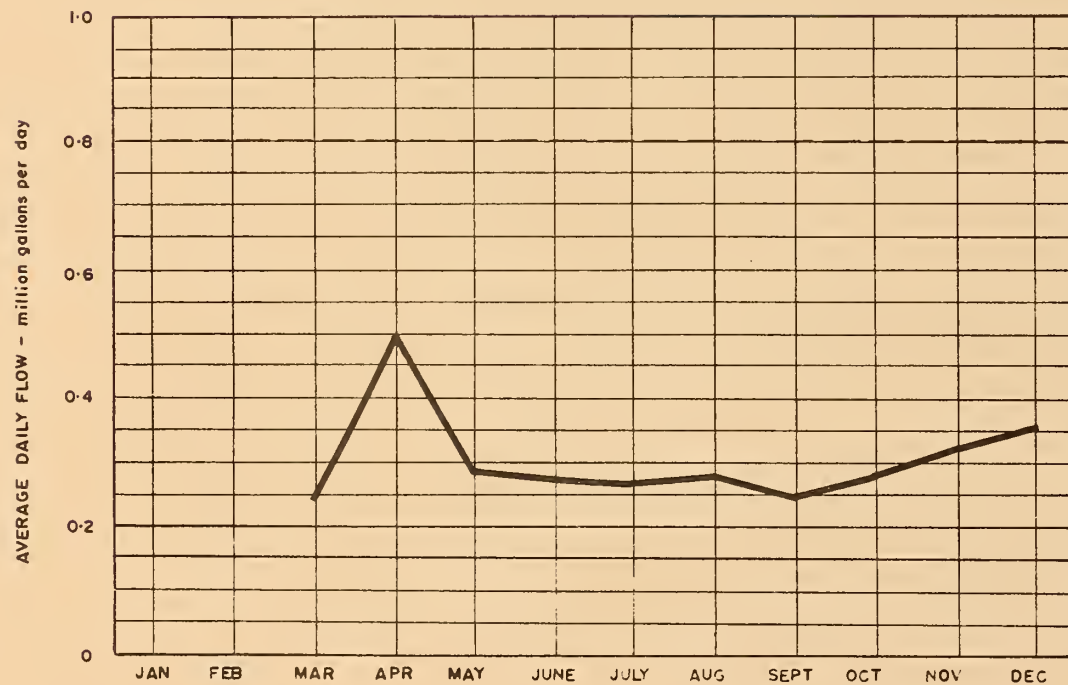
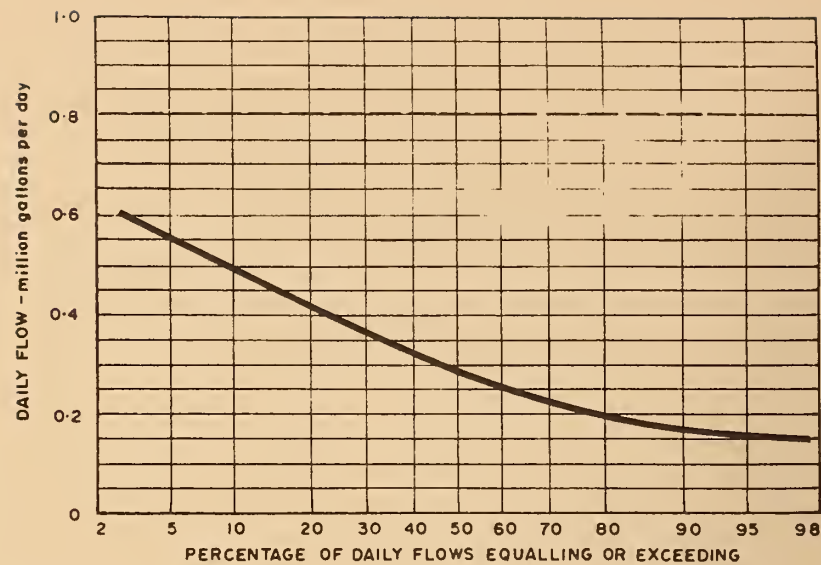
When industrial effluents are reduced to the by-law limit, and the air feed problem is resolved, it is expected that the process will operate more efficiently.

The effluent polishing lagoon improves the quality of the effluent and lessens the effect which the industrial shock load places on the receiving stream.

RECOMMENDATIONS

The municipality should take steps to have the vegetable processing industry comply with the sewer use by-law which limits suspended solids of wastes to the sewer to 350 mg/l.

FLOWS

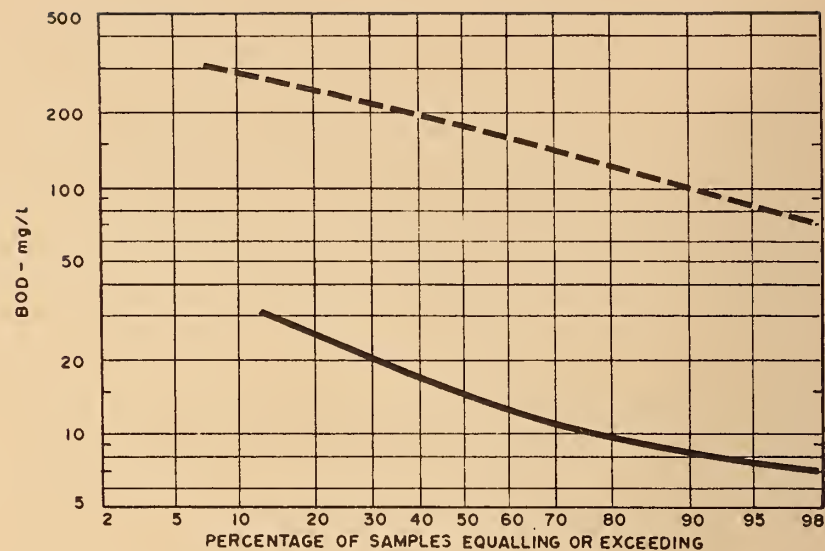


DESIGN CAPACITY — — — — —

PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l P	mg/l P
JAN													
FEB													
MAR	7.7	.25	.31										
APR	14.9	.50	.79	170	12	93	23.4	300	20	93	41.7	11.0	4.1
MAY	8.9	.29	.45	200	15	93	16.4	387	22	94	32.4	9.7	6.3
JUNE	8.2	.27	.51	180	10	94	13.9	190	15	92	14.3	12.0	3.4
JULY	8.5	.27	.37	135	8	94	10.7	140	13	91	10.7	7.4	6.5
AUG	8.6	.28	.39										
SEPT	7.5	.25	.41	140	12	94	9.6	1320	10	99	98.7	9.0	7.5
OCT	8.7	.28	.47	105	23	78	7.1	410	25	94	33.5	7.5	4.4
NOV	10.1	.34	.55	190	18	91	17.4	700	20	97	69.7	11.0	5.3
DEC	10.8	.35	.54	290	29	90	28.3	390	33	92	38.7	9.1	4.9
TOTAL		-	-	-	-	-		-	-	-		-	-
AVG.		.31	MAXIMUM .79	180	17	91	15.8	385	21	95	42.4	9.4	5.5
No. of Samples	-	-	-	13	13	-	-	13	13	-	-	11	11

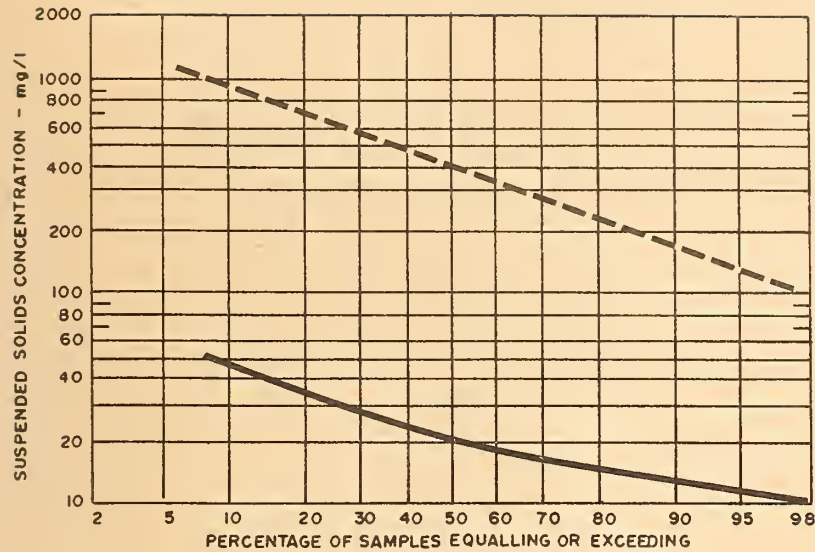
BIOCHEMICAL OXYGEN DEMAND



PLANT INFLUENT - - - - -

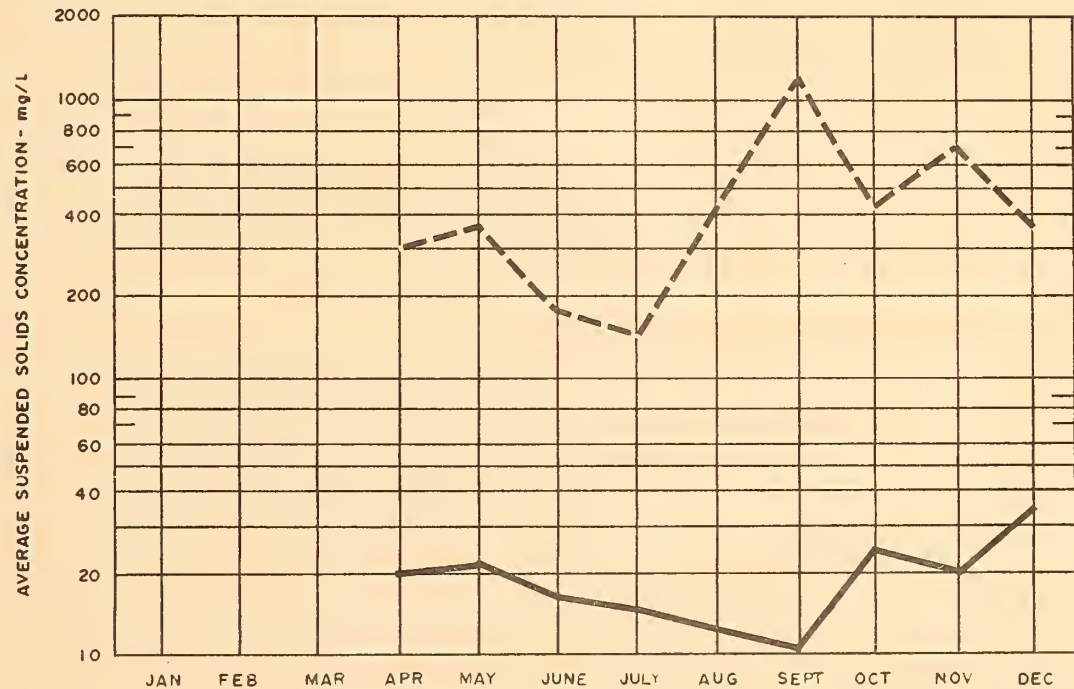
PLANT EFFLUENT —————

SUSPENDED SOLIDS

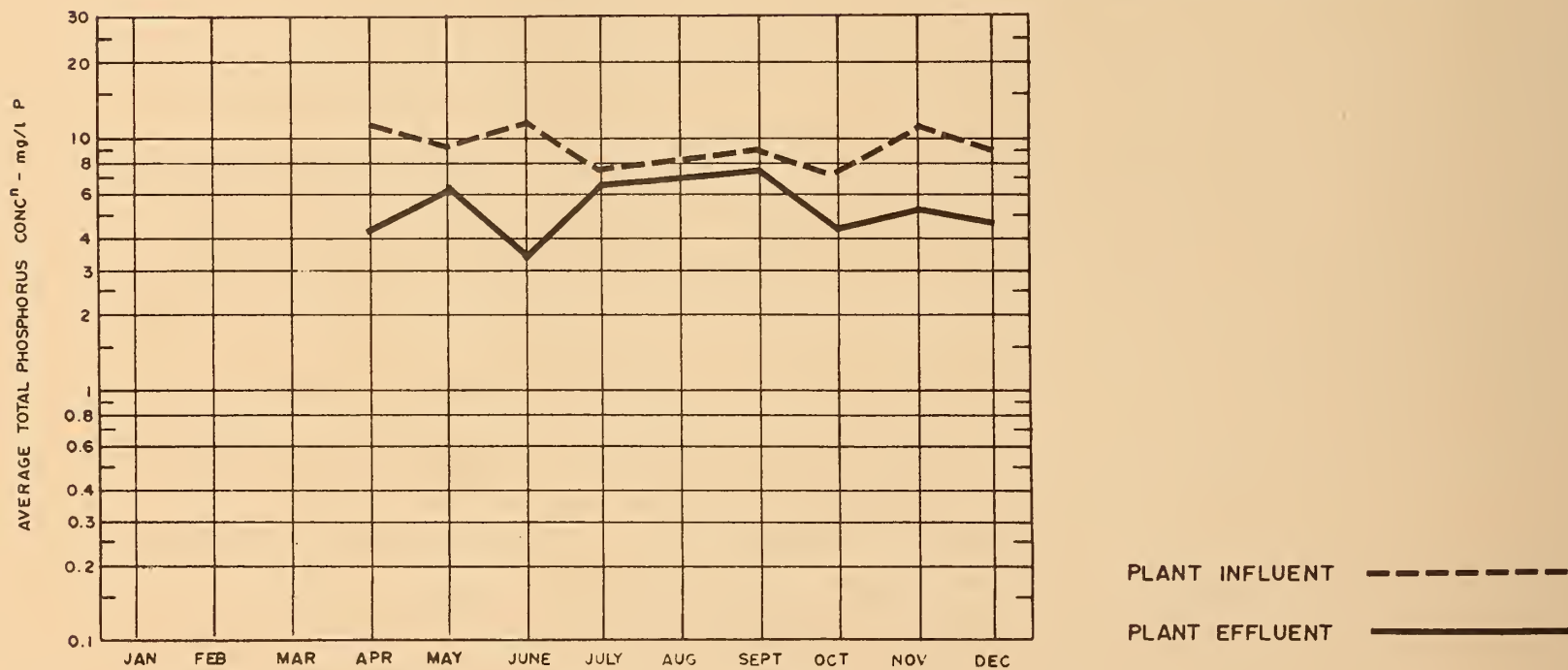
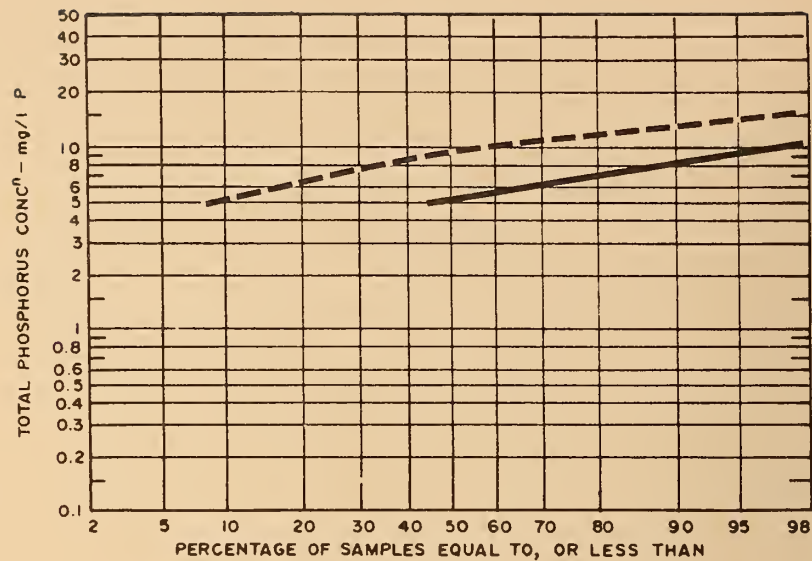


PLANT INFLUENT - - - - -

PLANT EFFLUENT _____



PHOSPHORUS



TREATMENT DATA

MONTH	GRIT	CHLORINATION		AERATION			WASTE SLUDGE			AEROBIC DIGESTER			
	QUANTITY REMOVED cubic feet	Cl ₂ USED pounds	AVG. DOSAGE mg/l	MLSS. CONC mg/l	F/M day ⁻¹	AIR USED $\frac{1000 \text{ ft}^3}{\text{lb BOD}}$	QUANTITY 10 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	QUANTITY REMOVED 10 ³ gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	AMOUNT HAULED cubic yards
JAN													
FEB													
MAR													
APR		349	2.3	10000	.10						21000	64	
MAY	3	145	1.6	2400	.28	.9				11.4			68
JUNE	6	484	5.9	2200	.23	1.6				6.8			40
JULY	3	549	6.5	3900	.06					42.5			253
AUG	15	518	6.0	3800						15.3			91
SEPT	13	437	5.8	4100	.07					6.8			40
OCT.	78	474	5.4	4300	.05					5.1			30
NOV	137	363	5.4	6800	.06								
DEC	116			5000	.12								
TOTAL	371	3319	-	-	-	-		-	-		-	-	
AVG.	3.3 cu. ft/mil gal	415	4.6	4700	.12	1.2				9.7	21000	64	58

Ontario. Ministry of
the Environment.
Project Operations Br.

TD 227/B69/W37/1972/MOE
Bradford water pollution
control plant.
1972

ISSUED TO

asfy

TD227/B69/W37/1972/MOE
Ontario Ministry of the En
Bradford water
pollution control asfy
c.1 a aa

TD
367
.A56
B733
1972

Bradford : water pollution
control plant.
81605

